

Extensive offshore movements of harbour porpoises (*Phocoena phocoena*)

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ABSTRACT

This paper presents the first data from satellite tracking of harbour porpoises (*Phocoena phocoena*) from West Greenland. Two female harbour porpoises (1 adult and 1 subadult) were driven into drift nets and equipped with satellite transmitters in July 2012, off West Greenland. The tags provided positions for +431 days (all transmitting) and 417 days, and data on daily depths of dives (\pm 0.5 m). After leaving the west coast of Greenland, one porpoise made extensive movements north to the Disko Bay, south to East Greenland and south east into the central North Atlantic where it wintered. It moved back to West Greenland the following summer. The other porpoise crossed the southern Davis Strait to Canada twice where it wintered in offshore waters before returning to the tagging site in West Greenland one year later. The porpoises travelled >17,500 km and 10,000 km, spent on average 83 % (72% for the subadult) and 94% for the adult) of their time in offshore areas (depths >200 m) and had maximum dives down to 382 m and 410 m. This is the first documentation of the annual movement cycle of an odontocete in the North Atlantic. The two harbour porpoises in this study displayed site fidelity to the summer feeding ground and despite different movement patterns both demonstrated that they are capable of inhabiting oceanic parts of the North Atlantic for a major part of the year. This is in contrast to common knowledge about the species and suggests that the occurrence of the species in offshore areas has been overlooked likely because of their inconspicuous appearance and frequent sightings in coastal waters.